

Preliminary Plans Presentation

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Clarksburg Cluster Elementary School #9 (New)

**Prepared for
Montgomery County Board of Education**

May 2020



Preliminary Plans Presentation

Clarksburg Cluster Elementary School #9 (New)

New School

22215 Dunlin Street
Clarksburg, Maryland 20841

Montgomery County Board of Education

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Mr. Donald Connelly	Planner II, Division of Capital Planning

Facility Design Process Involvement

Involvement

The preliminary plans for the Clarksburg Cluster Elementary School #9 project were developed based on the educational specifications prepared by Montgomery County Public Schools (MCPS). This is the fifth iteration of prototype elementary school design in Clarksburg Cluster, and the site and building layouts are pre-established as the site was dedicated by the developer. As a prototype building, review process involved a meeting with the Snowden Farm Elementary School staff, which is the most recent users, and comments were considered and several design alternatives were developed and evaluated. The proposed plans presented herein were reviewed and subsequently modified in accordance with recommendations and suggestions received during the schematic design meetings. Following the review and approval by the MCPS Board of Education, community engagements will be scheduled to ensure input and feedback from the school community and collaborate on the building design.

Participants in Facility Design Process

Yolanda Allen	Principal	Snowden Farm Elementary School
Carolyn Altuner	Staff	Snowden Farm Elementary School
Stephanie Broderick	Staff	Snowden Farm Elementary School
Marlen Cervantes	Staff	Snowden Farm Elementary School
Nicole Dantus	Staff	Snowden Farm Elementary School
Michelle Grenidge	Administrative Secretary	Snowden Farm Elementary School
Marissa Hill	Staff	Snowden Farm Elementary School
Melanie Jackson	Staff	Snowden Farm Elementary School
Erin Kleinman	Staff	Snowden Farm Elementary School
James Lewis	Staff	Snowden Farm Elementary School
Andrea Meadows	Staff	Snowden Farm Elementary School
Megan Meertens	Staff	Snowden Farm Elementary School
Kristi Ricca	Assistant Principal	Snowden Farm Elementary School
Kristin Toms	Staff	Snowden Farm Elementary School
Nancy Tran-Phan	Staff	Snowden Farm Elementary School

Project Information

Background / History

Location:	22215 Dunlin Street, Clarksburg, Maryland 20841
Cluster:	Clarksburg Cluster
Site Size:	9.89 acres
Proposed Building Size	95,327 square feet
Program Capacity:	721 (Core 740)

The Clarksburg Master Plan allows for the development of up to 15,000 residential units. The plan included five future elementary school sites and one future middle school site. A large number of housing units were constructed. A new cluster of schools was formed in the 2006–2007 school year when Clarksburg High School opened to accommodate the enrollment growth from the new development. Little Bennett Elementary School opened in September 2006, William B. Gibbs, Jr. Elementary School opened in September 2009, Wilson Wims Elementary School opened in September 2014, and Snowden Farm Elementary School opened in September 2019. With continued growth in elementary school enrollment, an additional elementary school is scheduled to open in August 2022. To address the enrollment growth in the cluster, a high school addition opened in September 2015, and Hallie Wells Middle School opened in September 2016.

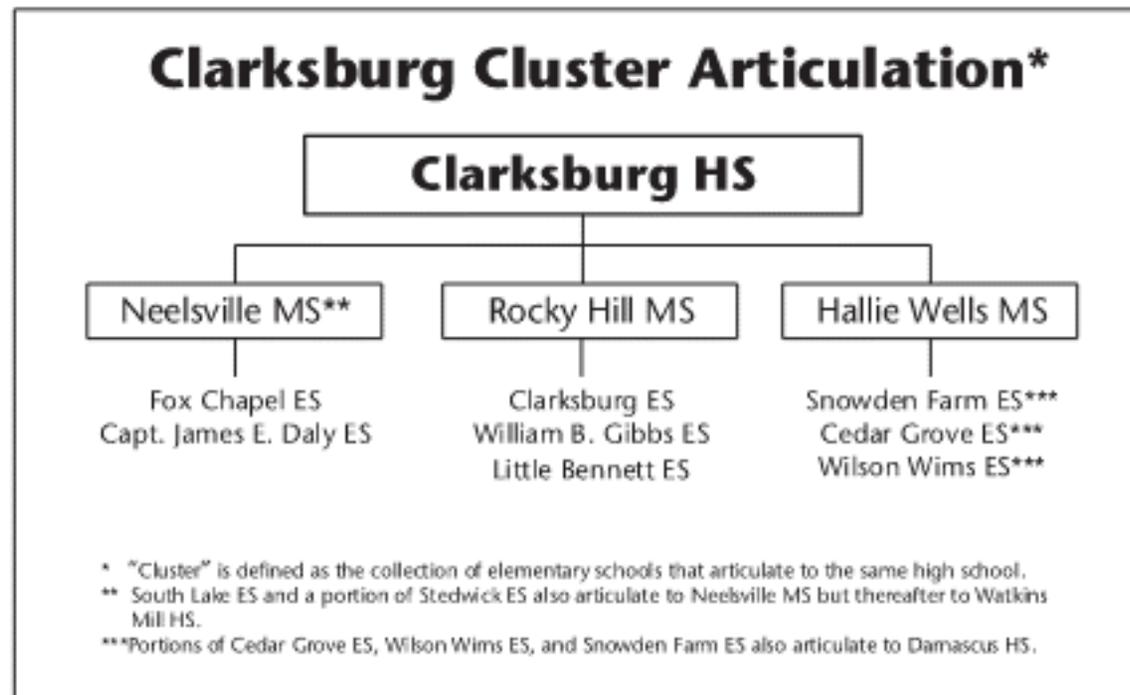
With student enrollment growth continuing at the elementary school level, the Clarksburg Cluster Elementary School #9 was approved for planning in FY 2020 with an anticipated completion date of August 2022.

Project Information (continued)

Educational Program Objectives

The Clarksburg Cluster includes three middle schools (Neelsville, Rocky Hill, and Hallie Wells) and eight elementary schools (Cedar Grove, Clarksburg, Capt. James E. Daly, Fox Chapel, William B. Gibbs, Jr., Little Bennett, Wilson Wims, and Snowden Farm). Clarksburg Cluster Elementary School #9 will serve as the ninth elementary school in the cluster.

The chart below indicates the articulation of schools in the Clarksburg Cluster.



Project Information (continued)

Educational Program Objectives

The following data include student enrollment projection compared to capacity, demographic characteristics, and program capacity table for elementary schools in the cluster for school year 2019-2020:

Schools			Prelim. 19-20	Projections					
				20-21	21-22	22-23	23-24	24-25	25-26
Clarksburg ES		Program Capacity	311	311	311	311	311	311	311
		Enrollment	624	606	646	689	725	727	722
		Available Space	<i>(313)</i>	<i>(295)</i>	<i>(335)</i>	<i>(378)</i>	<i>(414)</i>	<i>(416)</i>	<i>(411)</i>
		Comments							
Clarksburg ES #9		Program Capacity				721	721	721	721
		Enrollment							
		Available Space				721	721	721	721
		Comments				Opens			
Capt. James E. Daly ES		Program Capacity	523	523	523	523	523	523	523
		Enrollment	618	609	617	619	617	609	607
		Available Space	<i>(95)</i>	<i>(86)</i>	<i>(94)</i>	<i>(96)</i>	<i>(94)</i>	<i>(86)</i>	<i>(84)</i>
		Comments							
Fox Chapel ES	CSR	Program Capacity	683	683	683	683	683	683	683
		Enrollment	613	609	609	621	644	645	620
		Available Space	<i>70</i>	<i>74</i>	<i>74</i>	<i>62</i>	<i>39</i>	<i>38</i>	<i>63</i>
		Comments							
William B. Gibbs, Jr. ES	CSR	Program Capacity	719	719	719	719	719	719	719
		Enrollment	621	599	585	580	583	602	614
		Available Space	<i>98</i>	<i>120</i>	<i>134</i>	<i>139</i>	<i>136</i>	<i>117</i>	<i>105</i>
		Comments							

Project Information (continued)

Educational Program Objectives

Schools			Prelim.	Projections					
			19-20	20-21	21-22	22-23	23-24	24-25	25-26
Little Bennett ES		Program Capacity	624	624	624	624	624	624	624
		Enrollment	637	641	653	646	629	638	598
		Available Space	(13)	(17)	(29)	(22)	(5)	(14)	26
		Comments							
Snowden Farm ES		Program Capacity	774	774	774	774	774	774	774
		Enrollment	644	760	816	862	886	897	852
		Available Space	130	14	(42)	(88)	(112)	(123)	(78)
		Comments							
Wilson Wims ES		Program Capacity	739	739	739	739	739	739	739
		Enrollment	768	748	761	742	742	733	753
		Available Space	(29)	(9)	(22)	(3)	(3)	6	(14)
		Comments							
Cluster Information		HS Utilization	122%	114%	116%	115%	121%	121%	118%
		HS Enrollment	2472	2309	2365	2330	2469	2455	2410
		MS Utilization	92%	91%	91%	92%	92%	89%	93%
		MS Enrollment	2701	2696	2556	2723	2726	2842	2965
		ES Utilization	103%	105%	107%	93%	94%	95%	93%
		ES Enrollment	4525	4572	4687	4759	4826	4851	4766

Project Information (continued)

Educational Program Objectives

Demographic Characteristics of Schools

Schools	2019-2020						2018-2019		
	Total Enrollment	Two or more races %	Black or Afr. Amer. %	Asian%	Hispanic %	White %	FARMS%*	ESOL%**	Mobility Rate%***
Clarksburg HS	2472	4.4%	30.1%	21.8%	26.4%	17.2%	27.0%	8.1%	11.0%
Hallie Wells MS	873	6.8%	20.4%	35.2%	13.3%	24.3%	15.9%	3.2%	6.4%
Neelsville MS	945	2.5%	30.4%	8.6%	52.8%	5.1%	65.1%	18.0%	17.9%
Rocky Hill MS	883	6.5%	24.9%	29.6%	17.4%	21.1%	22.5%	4.5%	10.9%
Snowden Farm ES	644	4.3%	19.4%	48.3%	10.4%	17.4%	0%	0%	0%
Clarksburg ES	624	8.7%	24.7%	35.1%	14.7%	16.7%	15.3%	18.7%	18.7%
Captain James Daly ES	618	2.4%	33.5%	6.6%	52.4%	5.0%	75.4%	44.1%	20.0%
Fox Chapel ES	613	4.1%	25.3%	14.4%	45.7%	10.0%	52.2%	33.8%	20.4%
Little Bennett ES	637	7.1%	23.1%	25.7%	18.4%	25.3%	16.8%	12.7%	8.1%
William B. Gibbs Jr. ES	621	6.4%	29.6%	25.3%	20.8%	17.6%	33.4%	15.2%	16.9%
Wilson Wims ES	768	4.6%	17.1%	41.3%	13.5%	23.2%	8.5%	9.8%	4.8%
Elementary Cluster Total	4525	5.3%	24.4%	28.7%	24.6%	16.7%	29.9%	20.3%	13.2%
Elementary County Total	76541	5.3%	21.3%	13.6%	33.9%	25.5%	38.3%	25.6%	13.4%
Elementary County Total	76195	5.4%	21.5%	14.0%	32.7%	26.0%	38.3%	25.6%	13.1%

*Percent of students approved for Free and Reduced-priced Meals Program (FARMS) during the 2018-2019 school year.

**Percent of English for Speakers of Other Languages (ESOL) during the 2018-2019 school year. High School students are served in regional ESOL centers.

***Mobility Rate is the number of entries plus withdrawals during the 2018-2019 school year compared to total enrollment.

Notes: Native Hawaiian/Pacific Islander and American Indian/Alaskan Native categories total less than 1% and were therefore excluded from the table.

Due to federal and state guidelines, demographic characteristics of schools of less than or equal to 5 students per category are reported as 0%.

Project Information (continued)

Educational Program Objectives

Project Design Objectives

Clarksburg Cluster Elementary School #9 will utilize the MCPS elementary school prototype building design that was successfully implemented at Great Seneca Creek, William B. Gibbs, Jr., Little Bennett, Wilson Wims, and Snowden Farm elementary schools with modifications necessary to adapt to the site conditions. Following the guideline provided in the Regulation FAA-RA *Long-range Educational Facilities Planning*, the proposed new facility will be designed for a capacity of 721 students including the core spaces. The building design will encourage a flexible approach to accommodate the educational program and maximum connectivity to the surrounding physical environment. Each instructional area will have adequate learning spaces, work areas, restrooms, and storage facilities.

The following are some of key elements of the project design:

- Locate administration suite adjacent to the main entrance with visual surveillance of the student drop-off and bus loop
- Provide gymnasium and multi-purpose room accessibility to the school and community during non-school hours
- Provide safer vehicular access with a student drop-off loop separate from the bus loop
- Create a defined and welcoming entry
- Create a building with functional spatial relationships
- Create a building that allows easy supervision of students

Project Information (continued)

Space Summary:

New Construction

Teaching Stations:

Pre-kindergarten Classrooms	1
Kindergarten Classrooms	5
Classrooms (Grade 1-5)	23
Special Education Classroom (K-1 Autism)	1
Special Education Classroom (2/3 4/5 Autism)	2
Special Education Classroom (Pre-k PEP)	2
Music	1
Dual Purpose Room	1
Art	1

Core Facilities:

Administrative Suite	1
Health Suite	1
Multipurpose Room with Platform	1
Kitchen	1
Instructional Media Center	1
Gymnasium	1

Support Spaces:

Large Group Instruction Room	1
Small Group Instruction Room	2
Instrumental Music	1
Student Support Services	1
School Psychologist Office	1
Parent Group and Conference Room	1
Speech/ Language Room	2
Therapy/ Support Room	2
Autism Support Room	2
Observation Room/Office	2
Personal Care Room	1
Outdoor Equipment Storage	1
Testing/ Conference Room	1
Instructional Data Assistant Office	1
Support Staff Offices	3
Counselor's Office	1
Itinerant Staff Office	1
Staff Development Office	1
Reading Specialist Office	1
Training/ Conference Room	1
Building Services	1
Compactor Room	1
General Storage & Receiving	4
Workroom	3
Staff Lounge	1
Book Storage	1
PTA Storage	1
Before/After Care Kitchenette and Storage	1
Outdoor Storage	1
Staff Lounge	1

TOTAL TEACHING STATIONS **37**

Project Information (continued)

Site Design

Site Features:

Clarksburg Cluster Elementary School #9 site is situated on approximately 9.87 acres at the intersection of Clarksburg Road (State Route 121) and Dunlin Street in Clarksburg, Maryland. The site is bounded on the north, east, and west by single-family homes and on the south by a storm water management pond, woods, and Clarkmont Local Park that includes playgrounds, picnic area, baseball and soccer fields, and amphitheater. The site is set down from Route 121 and gently slopes from north to south along Dunlin Street. There is a steep slope at the south end of the site to the storm water management area.

The proposed site plan situates the new building near the center of the site, the parking, bus loop and student drop-off loop are located on the western side of the site along Dunlin Street, and the ballfields and play areas are located on the eastern portion of the site along Burne Road. All vehicular entry and exit will be accessed from Dunlin Street. On-site vehicular traffic circulation is designed to provide safe access to the school for pedestrians while providing approximately 90 parking spaces. Parking is also available along the surrounding streets. The student drop-off and the separate bus loop are designed to provide maximum queuing spaces on site to minimize the traffic backup on to the streets. Other site infrastructure includes providing a storm-water management system in compliance with the requirements of state and local regulations, necessary utilities to support the needs of the new facility, and exterior lighting for safety and security purposes.

Project Information (continued)

Building Design

General Description:

The proposed building plan is a repeat design of the MCPS elementary school prototype with modifications necessary for adaptation to specific site conditions, and incorporates feedback received from the staff at previous prototype schools. The proposed building is a partial two-story, steel-framed structure with brick veneer over masonry block exterior walls. Interior walls are primarily masonry block. All aspects of the plan are designed to meet the most current educational specifications. The building materials are in accordance with the MCPS facility design guidelines and designed with a focus on the sustainability and maintainability of the school.

The building is oriented southwest with the identifiable main entrance of the building facing Dunlin Street. The administrative suite is located at the front of the building to allow supervision of the main entrance, lobby, and student drop-off loop. The academic areas are organized around a large courtyard space to maximize the natural daylighting into the classrooms and promote an efficient interior circulation system. The prekindergarten, kindergarten, special education, and 1st grade classrooms are located on the ground floor level for security and safety reasons and the remainder of the classrooms for Grades 2-5 are located on the upper floor level. Stairways at each end of the building and a centrally-located stair in the lobby, along with an elevator provide vertical circulation within the building. The core support spaces of the building, consisting of the multi-purpose room, gymnasium, and media center, meet the standards of the elementary school program and also are designed to support community use by grouping the spaces together on the main floor of the building with controlled access. A secondary entrance with a canopy provides a sheltered entry from the fields and outdoor play area into the gymnasium lobby area.

Classroom Technology:

The classrooms will be designed to support interactive educational technology that includes controlled, wireless computer access and interactive whiteboard systems. The wireless technology throughout the building allows mobility of computer system and increased flexibility in classroom utilizations. Individual classrooms are designed to provide a student seating arrangement that can be organized into small groups for project-oriented teaching, or students can face the teacher in a traditional method.

Code Compliance/Accessibility:

All areas of the building will be designed to meet national and local building codes, include fire, life-safety, and health standards. The proposed building will be in full compliance with the 2010 Americans with Disabilities Act (ADA).

Project Information (continued)

Sustainability

The project will comply with the Montgomery County Amendments to the International Green Construction Code (IgCC). The school will be designed and constructed to meet requirements of the Maryland High Performance Building Program by conforming with Green Globes through its survey process. Some of the sustainable aspects of the project include the following:

- Encouraging alternative transportation to the school by providing conveniently located bike racks and preferred parking for low-emitting/fuel-efficient vehicles and carpools
- Preserving a high percentage of vegetated open space to protect the surrounding ecosystem
- Managing stormwater to both reduce runoff quantity and improve quality
- Using highly-reflective roof surfaces to reduce heat-island effect and heat gain to the building
- Installing water-conserving, low-flow plumbing fixtures
- Optimizing the energy performance of the building by providing highly energy-efficient building envelopes, lighting systems, heating, ventilation, air-conditioning systems, utilizing geo-exchange systems
- Optimizing equipment selection, installation, and operation of HVAC equipment through enhanced commissioning of the building energy systems
- Diverting construction “waste” from landfills to be salvaged for reuse or recycled
- Adhering to construction indoor air quality management plans and using low-emitting building materials to safeguard occupant health
- Providing a high level of occupant control over individual lighting and thermal comfort to promote enhanced indoor environment
- Promoting user education to increase awareness of the building’s green features and to utilize the school as a teaching tool for environmental and sustainability topics
- Using construction materials that are recycled and regionally manufactured
- Implementing a Green Housekeeping Plan
- Optimizing daylight in classrooms
- Minimizing background noise level from HVAC systems in classrooms and other core learning spaces and control reverberation time with sufficient sound-absorptive materials

Project Information (continued)

Building Design (continued)

One of the primary design factors required to achieve a sustainable facility is the conservation of energy. The importance and consideration placed on energy conservation will be reflected in the configuration and orientation of the building, the selection of materials, and the mechanical/electrical systems utilized. In addition, a direct digital automatic temperature control system will be provided to monitor and control all new Heating, Ventilation, and Air Conditioning equipment from a central building management system. The new building will be designed to meet or exceed 2015 International Energy Conservation Code (IECC), as well as Montgomery County energy conservation codes. The design will incorporate the ANSI/ASHRAE/IES Energy Efficient Design for New Buildings.

Mechanical Systems

Heating, Ventilation, and Air-Conditioning (HVAC) System:

The heating and cooling system for the school will consist of a variable refrigerant flow (VRF) system with water-cooled condensing units. Mechanical infrastructure to support the system's condensing units will include gas-fired condensing boilers, a cooling tower, cooling tower distribution pumps, loop distribution pumps, and a plate-and-frame heat exchanger. Ceiling cassette type VRF terminals will provide heating and cooling for the classroom and administration areas throughout the school.

Conditioned outdoor air for the classroom and administration areas will be supplied by a series of rooftop dedicated outdoor air systems, complete with indirectly gas-fired furnaces for heating, direct expansion cooling, and energy recovery for pre-conditioning and tempering of the outdoor air. Airflow supplied from these dedicated outdoor air units will be dehumidified, conditioned, and delivered directly to each space at a room neutral temperature.

Rooftop water-cooled heat pump units will provide space conditioning and ventilation airflow for the multipurpose room and gymnasium area. Data/IT closets throughout the school will be cooled through individual ductless split type air-conditioning units with low ambient cooling operation. Stairs, vestibules, mechanical rooms, electric rooms and miscellaneous heating only spaces will have electric unit heaters.

Automatic temperature controls will be direct digital type controls (DDC). Control system components will be interfaced with the central MCPS energy management control system for remote monitoring and energy management routines. The HVAC design shall be compliant with the latest applicable codes, and the current Montgomery County Public Schools facilities design standards.

Project Information (continued)

Building Design (continued)

Plumbing System:

The storm sewer, sanitary sewer and domestic water systems will be provided in accordance with the latest Washington Suburban Sanitary Commission (WSSC) plumbing codes and regulations. A combination fire/water service will extend to serve the proposed elementary school.

A gas-fired, condensing type water heater will generate domestic hot water for the school. The domestic hot water system will be complete with a circulation pump, an expansion tank, and a thermostatic mixing valve. The need for a domestic water booster pump is anticipated, but will be confirmed during the design process.

A natural gas service from Washington Gas will be provided. This gas service will be positioned outdoors and located adjacent to the main mechanical room.

New plumbing fixtures will be designed to meet the Americans with Disabilities Act (ADA) and utilize water conservation features. Floor-mounted water closets will utilize dual-flush type valves, capable of providing either 1.6 or 1.0 gallons per flush. Urinals will be wall-hung and provided with pint flush valves. Wall-hung cast-iron lavatories will utilize self-closing faucets that supply 0.5 gallons per minute. The water consumption figures noted are equal to or less than what is required by both the current plumbing code for promoting good water conservation practices.

Fire Protection System:

The entire school will be fully-sprinklered throughout with a wet-pipe sprinkler system in accordance with the National Fire Protection Association (NFPA) Standard 13. The sprinkler system will be separated into multiple zones that will align the building's fire alarm pull zones. The need for a fire pump is anticipated, but will be confirmed during the design process.

A fire detection and alarm control panel with voice evacuation will serve initiation devices (smoke detectors and manual pull stations) and notification devices (fire alarm speakers and strobes). Fire alarm annunciator panel with graphic display will be provided at the main building entrance.

Project Information (continued)

Building Design (continued)

Electrical Systems

Power Distribution:

There will be a 2000-ampere, 277/480-volt main switchboard serving panelboards and transformers in the main electrical room and electrical closets throughout the school. There will be panelboards for mechanical, lighting, emergency lighting, receptacle, and generator standby loads.

Generator Power System:

There will be an onsite outdoor 125-kW natural-gas generator to serve life-safety and standby loads via automatic transfer switches. Life safety loads include emergency egress lighting, exit lights, and fire alarm equipment. Standby loads include teacher station receptacles, telecom room receptacles, kitchen freezer and cooler, energy management system (EMS) panels, elevator cab, sumps pumps, smoke dampers, and heaters/heat trace for rooftop units.

Lighting and Lighting Controls:

Energy-efficient light emitting-diode (LED) lighting will be provided throughout. MCPS standard classroom lighting will be provided, which will have lighting relay room controllers, lighting control stations (switches), and ceiling sensors to control lighting fixtures and provide multiple levels of lighting. Emergency lighting will be automatically switched ON during a power outage.

Exterior Lighting:

Exterior lighting will utilize light emitting-diode (LED) lighting fixtures and will be designed to shield adjacent residences from intrusive glare while maintaining light levels for safety and security purposes. The lighting fixtures will be full cutoff with no upright to minimize light pollution into the night sky. There will be building mounted lighting around the perimeter of the proposed building addition. Wall-mounted fixtures will be designed to shield adjacent residences from intrusive glare while maintaining light levels for safety and security.

Project Information (continued)

Building Design (continued)

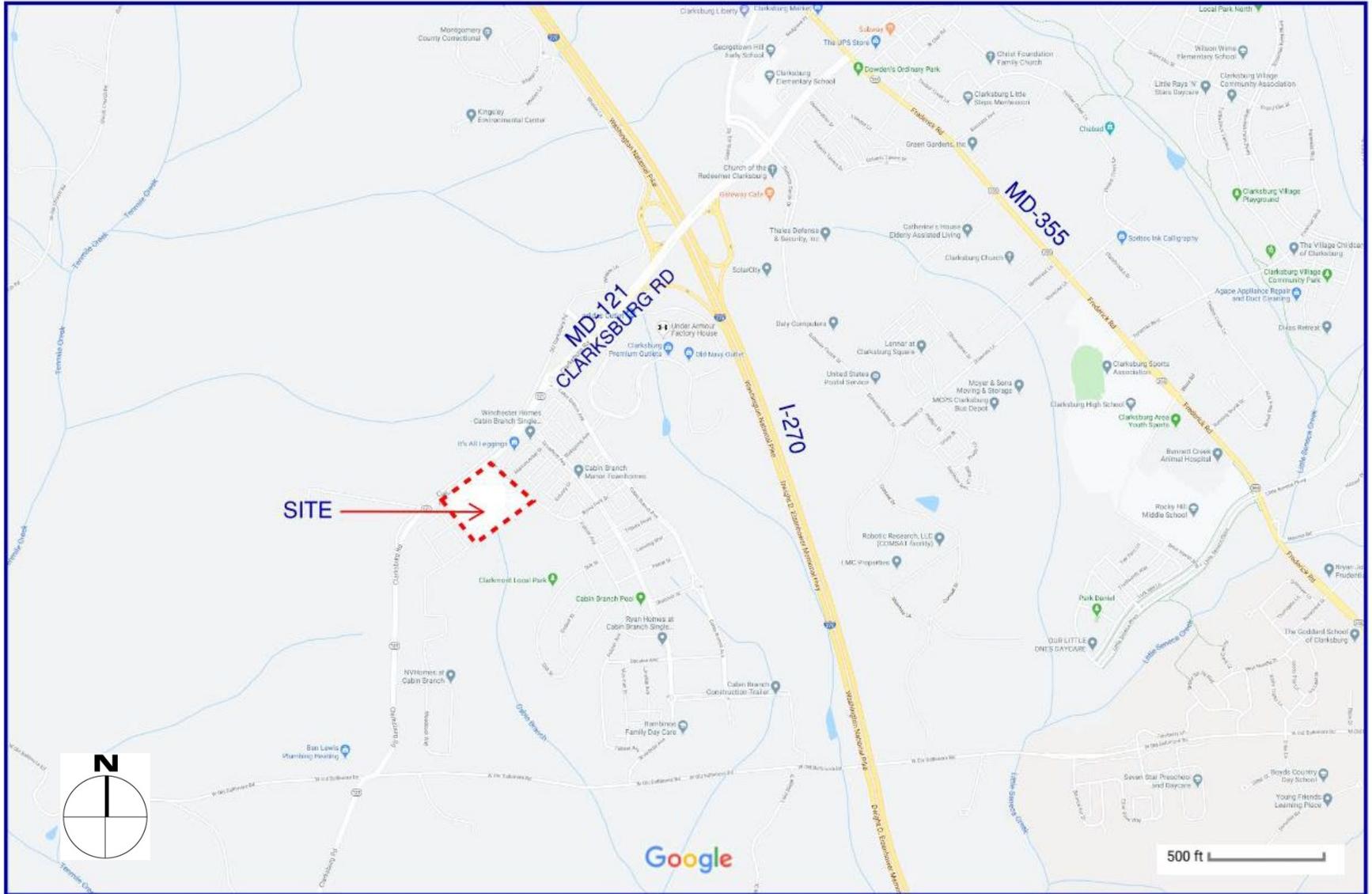
Intercom and Sound Systems:

Intercommunications/public address system devices include speakers and call switches. Stand-alone sound reinforcement systems will be provided in the gymnasium, multipurpose room, and music rooms per MCPS standards.

Communications and Security Systems:

School will have communications (data and voice) systems including wireless access points throughout for Wi-Fi. Provisions for audio/visual systems for instructional technology will be provided. Security systems will include door access control (card readers), intrusion detection (keypads and motion detectors), and video surveillance (cameras). Distributed antenna system will be provided for public safety radio for first responders.

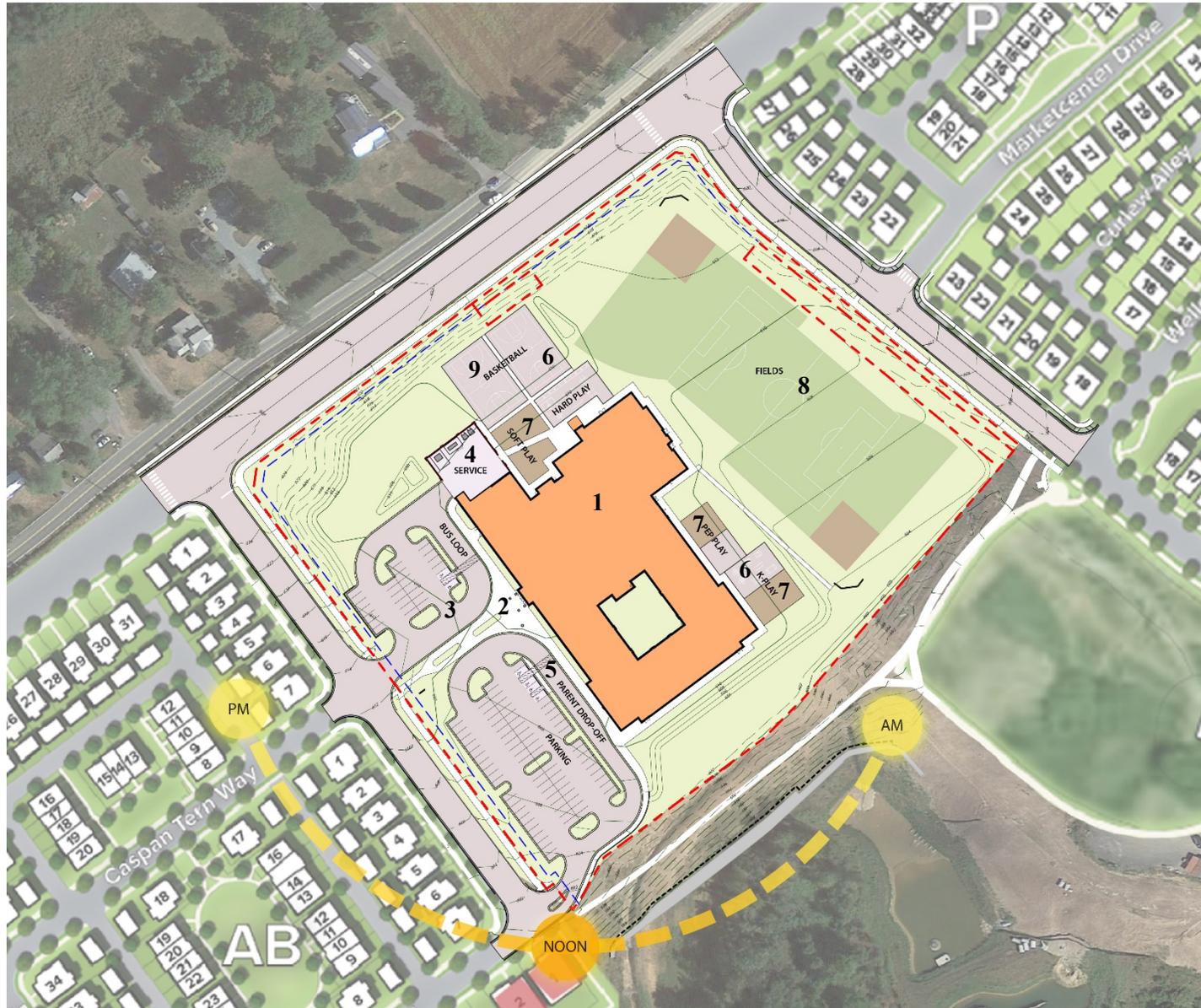
Vicinity Map



Existing Site Plan

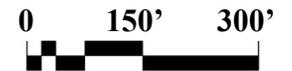


Proposed Site Plan



LEGEND

- 1 NEW BUILDING
- 2 MAIN ENTRY
- 3 BUS LOOP
- 4 SERVICE AREA
- 5 STUDENT DROP OFF
- 6 PAVED PLAY AREA
- 7 MULCHED PLAY AREA
- 8 ATHLETIC FIELDS
- 9 FUTURE RELOCATABLE CLASSROOMS



Proposed Elevations



West Elevation



North Elevation



Proposed Elevations (continued)



East Elevation



South Elevation



Project Team, Schedule, and Estimated Construction Costs

Design Team Members

Architect:	Grimm + Parker Architects
Civil Engineer:	ADTEK Engineers, Inc.
Structural Engineer:	ADTEK Engineers, Inc.
Mechanical/Electrical Engineer:	James Posey Associates, Inc.

Project Schedule

Preliminary Plans Presentation:	May	2020
Construction Documents Completed:	December	2020
Award Construction Contract:	March	2021
Project Completed:	August	2022

Estimated Construction Cost

New Building:	95,327 square feet
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Construction Cost Estimate for Building and Site:	\$29,770,000
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